Notice of Allowability	Application No.	Applicant(s)	
	10/029,406	DAI ET AL.	
	Examiner	Art Unit	
	Sandra Saucier	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 7/6/04 and examiner's amendment 9/10/04*.

2. ☒ The allowed claim(s) is/are *52-77*.

3. ☒ The drawings filed on *19 December 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 6/25/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Sandra Saucier
Primary Examiner
Art Unit: 1651

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with D. Wu on 9/9/04.

The application has been amended as follows:

Claims 1-51 have been cancelled.

Claims 52-77 have been added.

52. A method for measuring protein S activity in a test plasma sample comprising:

(a) mixing a sample of test plasma with protein S deficient plasma,
at least one recombinant tissue factor selected from the group consisting of recombinant rabbit, recombinant porcine, recombinant equine and recombinant human tissue factors,
purified or synthetic phospholipids comprising phosphocholine, phosphoserine and phosphoethanolamine.
activated protein C,
calcium ion,
and measuring a clotting time of the sample,

(b) comparing the measurement in (a) to a standard curve derived from clotting times of plasma samples having a range of known protein S activities.

53. The method of claim 52 wherein the phospholipids comprise 1,2-dioleoyl-sn-glycero-3-phosphocholine, 1,2-dioleoyl-sn-glycero-3-phospho-L-serine and 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine.

54. The method of claim 53 wherein the molar ratio of 1,2-dioleoyl-sn-glycero-3-phosphocholine, 1,2-dioleoyl-sn-glycero-3-phospho-L-serine and 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine is about 3 to about 4 to about 5.

55. The method of claim 52 wherein the activated protein C has been activated by thrombin.

56. The method of claim 52 wherein the activated protein C has been activated by snake venom.

57. The method of claim 52 wherein the activated protein C comprises recombinant protein C.

58. The method of claim 52 wherein one or more of the protein S deficient plasma, recombinant tissue factor and activated protein C is derived from a mammalian source selected from the group consisting of a cow, a pig and a rabbit.

59. The method of claim 52 wherein one or more of the protein S deficient plasma, recombinant tissue factor and activated protein C is derived from a human.

60. The method of claim 52 wherein the measuring step is chromogenic.

61. The method of claim 52 wherein the measuring step is spectophotometric.

62. The method of claim 52 wherein the at least one recombinant tissue factor comprises a recombinant rabbit tissue factor.

63. The method of claim 52 wherein the at least one recombinant tissue factor comprises a recombinant porcine tissue factor.

64. The method of claim 52 wherein the at least one recombinant tissue factor comprises a recombinant equine tissue factor.

65. The method of claim 52 wherein the at least one recombinant tissue factor comprises a recombinant human tissue factor.

66. The method of claim 52 wherein the at least one recombinant tissue factor is purified from mammalian cells.

67. A kit for measuring the functional activity of protein S in a plasma sample, said kit comprising one or more containers containing
protein S deficient plasma,
at least one recombinant tissue factor selected from the group consisting of recombinant rabbit, recombinant porcine, recombinant equine and recombinant human tissue factors,
purified or synthetic phospholipids comprising phosphocholine, phosphoserine and phosphoethanolamine,
calcium ion and
activated protein C.

68. The kit of claim 67 further comprising calibration plasma comprising about 100% protein S activity for preparing a standard curve.

69. The kit of claim 67 further comprising normal control plasma comprising between about 40-50% protein S activity.

70. The kit of claim 67 wherein the phospholipids comprise 1,2-dioleoyl-sn-glycero-3-phosphocholine, 1,2-dioleoyl-sn-glycero-3-phospho-L-serine and 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine.

71. The kit of claim 67 wherein the molar ratio of 1,2-dioleoyl-sn-glycero-3-phosphocholine, 1,2-dioleoyl-sn-glycero-3-phospho-L-serine and 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine is about 3 to about 4 to about 5.

72. The kit of claim 67 wherein the at least one recombinant tissue factor comprises a recombinant rabbit tissue factor.

73. The kit of claim 67 wherein the at least one recombinant tissue factor comprises a recombinant porcine tissue factor.

74. The kit of claim 67 wherein the at least one recombinant tissue factor comprises a recombinant equine tissue factor.

75. The kit of claim 67 wherein the at least one recombinant tissue factor comprises a recombinant human tissue factor.

76. The kit of claim 67 wherein the at least one recombinant tissue factor is purified from mammalian cells.

77. The kit of claim 67 further comprising a chromogenic substrate.

Reasons for Allowance

US '805 teaches that rabbit or human TF does not prolong clotting time in an assay for protein S activity. However, in applicants' assay which have distinct components from the components of the assay of '805 because applicants' components are highly purified and/or derived from recombinant or synthetic sources, rabbit and human TF unexpectedly prolong clotting times.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra Saucier whose telephone number is (571) 272-0922. The examiner can normally be reached on Monday, Tuesday, Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, M. Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sandra Saucier
Primary Examiner
Art Unit 1651